

Practice: 422 - Hedgerow Planting**Scenario: #1 - Pollinator Habitat****Scenario Description:**

Where pollinator habitat is an additional wildlife habitat concern this scenario addresses the resource concern of inadequate fish and wildlife habitat. It provides both physical habitat by providing areas that are not disturbed by annual tillage and provides pollen and nectar throughout the growing season by establishing a diverse mixture of flowering plants. Typically a mixture of 9 or more species is planted to improve diversity so that pollen and nectar are available as long as possible. Typical installation is in or at the edge of cropland or pasture. Typical installation involves tillage to prepare the site for planting. Flowering trees and shrubs adapted for local climatic and edaphic conditions are typically planted at eight - ten foot intervals (this will vary with species selection and density goals). Native grasses adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. A locally adapted mixture of pollen and nectar producing plants will be drilled into the site. The species list in the component section of this scenario are strictly for deriving a cost. Species adapted to local climatic and edaphic conditions will be listed in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Pollen and nectar sources are lacking or are only available for part of the growing season. Large cropland tracts lack undisturbed areas for ground nesting bees.

After Situation:

Flowering plants supply pollen and nectar throughout the growing season. Undisturbed areas provide nesting sites for bees and other native pollinators.

Scenario Feature Measure: Length and width of Hedgerow

Scenario Unit: Foot

Scenario Typical Size: 660

Scenario Cost: \$984.83

Scenario Cost/Unit: \$1.49

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.71	0.33	\$4.85
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$18.93	0.33	\$6.25
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$51.13	2	\$102.26
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$11.62	2	\$23.24
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	2	\$35.44
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	2	\$39.56
Materials						
Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.58	166	\$96.28
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.31	66	\$20.46
Tree shelter, solid tube type, 3-1/4" x 36"	1561	3-1/4" x 36" tree tube for protection from animal damage. Materials only.	Each	\$2.60	166	\$431.60
Three Species Mix, Native Forb	2333	Native forb mix. Includes material and shipping only.	Acre	\$586.90	0.33	\$193.68
Two Species Mix, Warm Season, Native Perennial Grass	2325	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$94.57	0.33	\$31.21

Practice: 422 - Hedgerow Planting**Scenario: #2 - Wildlife, Warm Season Grass****Scenario Description:**

Typically installed in or at the edge of cropland or pasture this scenario is used to address the Inadequate Habitat for Fish and Wildlife resource concern. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: corridors for habitat connectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants. Typical installation involves tillage to prepare the site for planting. Shrubs adapted for local climatic and edaphic conditions are typically planted at eight foot intervals (this will vary with species selection and density goals). A mix of at least 3 native warm season grasses and forbs adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Berries and mast are limited. Site not suited to conifer or hardwood trees or site lacking needed tree components.

After Situation:

Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by corridors of dense hedgerow vegetation. Food resources in crop fields are made available by their proximity to hedgerow cover. Planting may include fruit and seed bearing species, improving food supply, depending on needs being addressed. Site not suited to conifer or hardwood trees or Site not lacking needed tree components.

Scenario Feature Measure: Length and width of Hedgerow

Scenario Unit: Foot

Scenario Typical Size: 660

Scenario Cost: \$794.10

Scenario Cost/Unit: \$1.20

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$51.13	2	\$102.26
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$18.93	0.33	\$6.25
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.71	0.33	\$4.85
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$11.62	2	\$23.24
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	2	\$35.44
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	2	\$39.56
Materials						
Two Species Mix, Warm Season, Native Perennial Grass	2325	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$94.57	0.33	\$31.21
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.33	\$23.41
Tree shelter, solid tube type, 3-1/4" x 36"	1561	3-1/4" x 36" tree tube for protection from animal damage. Materials only.	Each	\$2.60	166	\$431.60

Materials

Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.58	166	\$96.28
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Practice: 422 - Hedgerow Planting**Scenario: #3 - Wildlife, Trees - Shrubs only****Scenario Description:**

Typically installed in or at the edge of cropland or pasture this scenario is used to address the Inadequate Habitat for Fish and Wildlife resource concern. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: corridors for habitat connectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants. Typical installation involves tillage to prepare the site for planting. 2 Trees and/or shrubs adapted for local climatic and edaphic conditions are typically plant at eight - ten foot intervals (this will vary with species selection and density goals). The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Berries and mast are limited.

After Situation:

Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by corridors of dense hedgerow vegetation. Food resources in crop fields are made available by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed.

Scenario Feature Measure: Length and width of Hedgerow**Scenario Unit:** Foot**Scenario Typical Size:** 660**Scenario Cost:** \$692.64**Scenario Cost/Unit:** \$1.05**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.71	1	\$14.71
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$11.62	2	\$23.24
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$51.13	1	\$51.13
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	1	\$19.78
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	2	\$35.44
Materials						
Tree shelter, solid tube type, 3-1/4" x 36"	1561	3-1/4" x 36" tree tube for protection from animal damage. Materials only.	Each	\$2.60	166	\$431.60
Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.58	166	\$96.28
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.31	66	\$20.46

Practice: 422 - Hedgerow Planting**Scenario: #4 - Wildlife - Trees-Shrubs-NWSG****Scenario Description:**

Typically installed in or at the edge of cropland or pasture this scenario is used to address the Inadequate Habitat for Fish and Wildlife resource concern. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: corridors for habitat connectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants. Typical installation involves tillage to prepare the site for planting. 2 Trees and/or shrubs adapted for local climatic and edaphic conditions are typically plant at eight - ten foot intervals (this will vary with species selection and density goals). A mix of at least 3 native warm season grasses (NWSG) and forbs adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Berries and mast are limited.

After Situation:

Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by corridors of dense hedgerow vegetation. Food resources in crop fields are made available by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed.

Scenario Feature Measure: Length and width of Hedgerow

Scenario Unit: Foot

Scenario Typical Size: 660

Scenario Cost: \$814.56

Scenario Cost/Unit: \$1.23

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$11.62	2	\$23.24
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$18.93	0.33	\$6.25
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.71	0.33	\$4.85
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$51.13	2	\$102.26
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	2	\$39.56
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	2	\$35.44
Materials						
Tree shelter, solid tube type, 3-1/4" x 36"	1561	3-1/4" x 36" tree tube for protection from animal damage. Materials only.	Each	\$2.60	166	\$431.60
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.31	66	\$20.46
Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.58	166	\$96.28
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.33	\$23.41

Materials

Two Species Mix, Warm Season, Native Perennial Grass	2325	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$94.57	0.33	\$31.21
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Practice: 422 - Hedgerow Planting**Scenario: #5 - Visual-Odor Screen****Scenario Description:**

Where aesthetics and/or air quality is a resource concern, vegetative barriers are needed to provide visual and/or odor screens. This scenario also addresses the resource concern of inadequate fish and wildlife habitat. It provides both physical habitat by providing areas that are not disturbed by annual tillage and provides year round cover and seasonal foods by establishing a diverse mixture of plants. Typical installation is in or at the edge of ag fields, farm headquarters, and/or confined livestock facilities. Two offset rows of evergreen conifers are planted at 10 ft. intervals to provide a year round visual and/or odor screen. Flowering trees and shrubs adapted for local climatic and edaphic conditions are typically planted at eight foot intervals (this will vary with species selection and density goals). Species adapted to local climatic and edaphic conditions will be listed in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials if desired. If a fence is needed to facilitate establishment use practice 382, Fence.

Before Situation:

Line of Sight and/or unpleasant odors are unimpeded due to lack of protective vegetative cover. Wildlife have inadequate escape/roosting and feeding cover.

After Situation:

Year round protective cover provides visual and/or odor screens as well as wildlife escape/roosting habitat and seasonal foods.

Scenario Feature Measure: Length and width of Hedgerow

Scenario Unit: Foot

Scenario Typical Size: 660

Scenario Cost: \$680.10

Scenario Cost/Unit: \$1.03

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.71	1	\$14.71
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	\$11.62	2	\$23.24
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$51.13	1	\$51.13
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	1	\$19.78
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	2	\$35.44
Materials						
Tree, conifer, seedling, bare root, 1-0	1512	Bare root conifer trees, 1-0 (1 year old). Includes materials and shipping only.	Each	\$0.06	132	\$7.92
Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	\$0.58	166	\$96.28
Tree shelter, solid tube type, 3-1/4" x 36"	1561	3-1/4" x 36" tree tube for protection from animal damage. Materials only.	Each	\$2.60	166	\$431.60